

### Claims

1. A method for depositing a coating on one face of a container (3) made of a thermoplastic using a low-pressure plasma by excitation of a precursor gas by UHF electromagnetic waves in a circular vacuum chamber (1) containing said container, characterized in that the chamber (1) is sized in relation to the frequency of the UHF electromagnetic waves so as to obtain a coupling mode that generates several electromagnetic fields inside the chamber, whereby it is possible for several respective containers (3) to be simultaneously treated in the same chamber (1).
2. The method as claimed in claim 1, characterized in that a TM 120 coupling mode is established, which generates two central fields (4<sub>A</sub>, 4<sub>B</sub>) inside the chamber, whereby two containers (3) can be simultaneously treated in said chamber (1).
3. A device for depositing a coating on one face of a container (3) made of a thermoplastic using a low-pressure plasma by excitation of a precursor gas by UHF electromagnetic waves in a circular vacuum chamber (1) containing said container (3), which device comprises a UHF wave generator (7) and a UHF waveguide for connecting said generator to a window (2) of the side wall of the chamber (1), characterized in that the chamber (1) is sized in relation to the frequency of the UHF electromagnetic waves in order to establish a TM 120 coupling mode that generates two central fields (4<sub>A</sub>, 4<sub>B</sub>) in the cavity (1), whereby it is possible for two containers (3) to be simultaneously treated in said chamber (1).
4. The device as claimed in claim 3, characterized in that the generator (7) emits an electromagnetic wave having a frequency  $f=2.455$  GHz and in that the diameter

of the chamber (1) is approximately 273 mm.

5. The device as claimed in claim 3 or 4, characterized in that the chamber (1) contains two  
5 quartz envelopes (8) mounted in a vacuum-tight manner in the chamber and placed respectively so as to be approximately coaxial with the two central fields (4<sub>A</sub>, 4<sub>B</sub>), in that the chamber (1) includes a single window (2) for injecting the UHF waves, the window (2) being  
10 located along the axis of symmetry of the two central fields (4<sub>A</sub>, 4<sub>B</sub>), and in that a single cover (9) for closing off the chamber (1) is equipped with a single coupler (10) for connection to a vacuum source, which is divided into two (at 11) in order to be connected to  
15 the abovementioned two respective envelopes (8), with two precursor gas injectors (13) that are connected to a single precursor gas source and with two support means (12) for the two respective containers (3).

20 6. The device as claimed in claim 5, characterized in that it includes positionally adjustable bottom (17<sub>i</sub>) and top (17<sub>s</sub>) plates suitable for acting on the respective return fields (5<sub>A</sub>, 5<sub>B</sub>) so as to refine the coupling according to the various types of container  
25 (3) that can be treated.

7. The device as claimed in claim 5 or 6, characterized in that it is designed for coating the inside of containers and in that for this purpose, the  
30 precursor gas injectors (13) are designed to sit inside the respective containers (3) when the latter are supported by support means in the envelopes (8).